**7.1**

**Ratio and Proportion**

Ratio: A comparison of a number a and a nonzero number b using division.

Ex. Ratios can be written in three forms:

As a fraction , or a:b , or a to b.

Simplify the following ratios:

1. 60 cm:200 cm  
2.  (units must be the same) so, 

Using ratios:

Using the figure at the right ,

find AB and BC, if AB:BC is 4:1.

AB + BC = AC  4x + x = 30

Ex. The perimeter of a rectangle is 80 ft. The ratio of the length to the width is 7:3. Find the length and the width of the rectangle.

Perimeter of a rectangle = 2w + 2L so,

P = 2(3x) + 2(7x)

80 = 6x + 14x

80 = 20x

4 = x

Solving a proportion

Proportion: an equation that states that two ratios are equal.

Ex. 

Means of a proportion: numbers b and c.

Extremes of a proportion: numbers a and d.

Cross product property: In a proportion the product of the extremes is equal to the product of the means.

Ex. If , then ad = bc.

Find x if . 10x = 40 , x = 4 Find y if .

Find m if 